R.1.126 77 ~~79.~~ (New) A communication circuit comprising:

communications circuitry having an input and an output; and

a noise suppressor comprising:

an amorphous magnetic core; and

a bifilar winding around said amorphous magnetic core.

78 ~~80.~~ (New) A noise suppressor assembly comprising:

a multiplicity of noise suppressors, at least one of said multiplicity of noise suppressors including:

an amorphous magnetic core; and

a bifilar winding wound around said amorphous magnetic core.

a'

79 ~~81.~~ (New) A noise suppressor assembly according to claim 78 ~~80~~, and wherein said multiplicity of noise suppressors includes at least first and second noise suppressors having cores containing different amorphous magnetic materials.

80 ~~82.~~ (New) A noise suppressor assembly comprising at least one noise suppressor including:

a core including ferrite and an amorphous magnetic material; and

a bifilar winding wound around said core.

81 ~~83.~~ (New) A noise suppressor assembly according to claim 80 ~~82~~, and wherein said at least one noise suppressor comprises a multiplicity of noise suppressors including at least first and second noise suppressors having cores containing different amorphous magnetic materials.

82 ~~84.~~ (New) A wide band noise suppressor comprising:

a core assembly comprising a multiplicity of amorphous magnetic cores; and

a bifilar winding wound around said core assembly.

83 ~~85.~~ (New) A wide band noise suppressor comprising:

a core comprising a mixture of a plurality of different amorphous magnetic materials; and

a bifilar winding wound around said core.

84 ~~86.~~ (New) A signal to interference enhancer comprising:

at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit operative to decrease radio frequency interference in said received signal,

a1 cont said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal.

85 ~~87.~~ (New) A signal to interference enhancer according to claim 86, and wherein said at least one active analog circuit comprises a subtraction circuit which cancels common mode interference.

86 ~~88.~~ (New) A signal to interference enhancer according to claim 86, and wherein said at least one passive analog circuit comprises a passive filter which reduces the amplitude of common mode interference.

87 89. (New) A signal to interference enhancer according to claim 87, and wherein said at least one passive analog circuit operates in a frequency range which is at least partially non-overlapping with a frequency range of operation of said at least one active analog circuit.

88 ~~90.~~ (New) A signal to interference enhancer according to claim 88, and wherein said at least one passive analog circuit operates in a frequency range which is at least partially non-

overlapping with a frequency range of operation of said at least one active analog circuit.

89 91. (New) A signal to interference enhancer according to claim 86, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference.

90 92. (New) A signal to interference enhancer according to claim 87, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference.

A' cont 91 93. (New) A signal to interference enhancer according to claim 88, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference.

92 94. (New) A signal to interference enhancer according to claim 89, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference.

93 95. (New) A signal to interference enhancer according to claim 86, and wherein said at least one passive analog circuit comprises:

a low-pass EMI filter operative to attenuate interference at frequencies above a desired frequency pass band; and

a plurality of cascaded common mode chokes connected in series with said EMI filter, said common mode chokes being operative to attenuate interference at frequencies

within said desired frequency pass band.

96. (New) A signal to interference enhancer according to claim 95, and also comprising metallic barriers located at said filter and at said cascaded common mode chokes in order to reduce parasitic input to output interference coupling.

97. (New) A signal to interference enhancer according to claim 95, and wherein said plurality of cascaded common mode chokes include at least one choke comprising:

at least one core comprising a metal-based amorphous material and a ferrite material; and

at least one coil wound about said at least one core.

98. (New) A signal to interference enhancer according to claim 97, and wherein said ferrite material comprises silicon steel permalloy.

99. (New) A signal to interference enhancer according to claim 97, and wherein said amorphous material has magnetic permeability between 20,000 - 100,000.

100. (New) A signal to interference enhancer according to claim 99, and wherein said magnetic permeability varies with changes in temperature between -30 C and 85 C by less than 5%.

101. (New) A signal to interference enhancer according to claim 97, and wherein said amorphous material has a saturation current of at least 5 Amperes.

102. (New) A signal to interference enhancer according to claim 97, and wherein said at least one core comprises separate core elements made of said metal-based amorphous material and of said ferrite material.

101

103. (New) A signal to interference enhancer comprising:

a low-pass EMI filter operative to attenuate interference at frequencies above a desired frequency pass band; and

a plurality of cascaded common mode chokes connected in series with said EMI filter, said common mode chokes being operative to attenuate interference at frequencies within said desired frequency pass band.

102

104. (New) A signal to interference enhancer according to claim 103, and wherein said plurality of cascaded common mode chokes include

at least one choke comprising at least one core comprising a metal-based amorphous material and a ferrite material; and

at least one coil wound about said at least one core.

a/ cont 103

105. (New) A signal to interference enhancer according to claim 104, and wherein said ferrite material comprises silicon steel permalloy.

104

106. (New) A signal to interference enhancer according to claim 104, and wherein said amorphous material has magnetic permeability between 20,000 - 100,000.

105

107. (New) A signal to interference enhancer according to claim 106, and wherein said magnetic permeability varies with changes in temperature between -30 C and 85 C by less than 5%.

106

108. (New) A signal to interference enhancer according to claim 104, and wherein said amorphous material has a saturation current of at least 5 Amperes.

107

109. (New) A signal to interference enhancer according to claim 104, and wherein said at least one core comprises separate core elements made of said metal-based amorphous

material and of said ferrite material.

108 110. (New) A signal to interference enhancer according to claim 103, and also comprising metallic barriers located at said filter and at said cascaded common mode chokes in order to reduce parasitic input to output interference coupling.

109 111. (New) A signal to interference enhancer embodied in a circuit package and comprising:

a low-pass EMI filter operative to attenuate interference at frequencies above a desired frequency pass band;

a plurality of cascaded common mode chokes connected in series with said EMI filter, said common mode chokes being operative to attenuate interference at frequencies within said desired frequency pass band; and

metallic barriers located at said filter and at said cascaded common mode chokes in order to reduce parasitic input to output interference coupling.

a' cont

110 112. (New) A communication noise suppressing method comprising:

providing a communications circuitry having an input and an output;

providing an amorphous magnetic core;

winding a bifilar winding around said amorphous magnetic core and in series with at least one of said communications circuitry input and communications circuitry output; and

passing a communication signal from said input, through said bifilar winding and to said output for suppressing noise in said communication signal.

111 113. (New) A noise suppressing method comprising:

providing a multiplicity of magnetic cores, at least one of said multiplicity of magnetic cores comprising an amorphous magnetic core;

winding a bifilar winding around each of said plurality of magnetic cores;

connecting said bifilar windings in series; and

passing a signal through said bifilar windings for suppressing noise in said signal.

112

~~114~~. (New) A noise suppressing method comprising:

providing at least one core including ferrite and an amorphous magnetic material;

winding a bifilar winding around said at least one core; and

passing a signal through said bifilar winding for suppressing noise in said signal.

113

~~115~~. (New) A noise suppressing method according to claim 113 ,and wherein said at least one core comprises a multiplicity of cores including at least first and second cores containing different amorphous magnetic materials.

a' cont 114

~~116~~. (New) A wide band noise suppressing method comprising:

providing a core assembly comprising a multiplicity of amorphous magnetic cores;

winding a bifilar winding wound around said core assembly; and

passing a signal through said bifilar winding for suppressing noise in said signal.

115

~~117~~. (New) A wide band noise suppressing method comprising:

providing a core comprising a mixture of a plurality of different amorphous magnetic materials;

winding a bifilar winding wound around said core; and

passing a signal through said bifilar winding for suppressing noise in said signal.

116

~~118~~. (New) A signal to interference enhancing method comprising:

providing at least one passive analog circuit operative to decrease radio frequency interference in a received signal;

providing at least one active analog circuit operative to decrease radio frequency

interference in said received signal;

arranging said at least one passive analog circuit and said at least one active analog circuit in series; and

passing a radio frequency signal through said passive analog circuit and said active analog circuit for enhancing said signal to interference therein.

117 119. (New) A signal to interference enhancing method according to claim 118, and wherein said at least one active analog circuit cancels common mode interference.

118 120. (New) A signal to interference enhancing method according to claim 118, and wherein said at least one passive analog circuit reduces the amplitude of common mode interference.

a' cont 119 121. (New) A signal to interference enhancing method according to claim 118, and wherein said at least one passive analog circuit operates in a frequency range which is at least partially non-overlapping with a frequency range of operation of said at least one active analog circuit.

120 122. (New) A signal to interference enhancing method according to claim 120, and wherein said at least one passive analog circuit operates in a frequency range which is at least partially non-overlapping with a frequency range of operation of said at least one active analog circuit.

121 123. (New) A signal to interference enhancing method according to claim 118, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference.

122 124. (New) A signal to interference enhancing method according to claim 119, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode

interference.

123
125. (New) A signal to interference enhancing method according to claim 120, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference.

124
126. (New) A signal to interference enhancing method according to claim 121, and wherein said at least one passive analog circuit is operative to reduce non-common mode interference due to imperfect balancing of first and second transmission lines by filtering the common mode interference.

a! cont
125
127. (New) A signal to interference enhancing method according to claim 118, and wherein said at least one passive analog circuit employs an EMI filter to attenuate interference at frequencies above a desired frequency pass band and employs a plurality of cascaded common mode chokes connected in series with said EMI filter to attenuate interference at frequencies within said desired frequency pass band.

126
128. (New) A signal to interference enhancing method according to claim 127, and also comprising employing metallic barriers located at said filter and at said cascaded common mode chokes to reduce parasitic input to output interference coupling.

127
129. (New) A signal to interference enhancing method according to claim 128, and wherein said at least one core comprises separate core elements made of said metal-based amorphous material and of said ferrite material.

128
130. (New) A signal to interference enhancing method comprising:

employing a low-pass EMI filter to attenuate interference above a desired

frequency pass band;

employing a plurality of cascaded common mode chokes connected in series with said EMI filter to attenuate interference at frequencies within said desired frequency pass band; and

passing a signal through said low-pass EMI filter and said plurality of cascaded common mode chokes for suppressing noise in said signal.

129 131. (New) A signal to interference enhancing method according to claim 130, and also comprising metallic barriers located at said filter and at said cascaded common mode chokes in order to reduce parasitic input to output interference coupling.

a' 130 cont 132. (New) A signal to interference enhancing method comprising:

employing a low-pass EMI filter to attenuate interference at frequencies above a desired frequency pass band;

employing a plurality of cascaded common mode chokes connected in series with said EMI filter to attenuate interference at frequencies within said desired frequency pass band; and

employing metallic barriers located at said filter and at said cascaded common mode chokes to reduce parasitic input to output interference coupling.

131 133. (New) A signal to interference enhancer according to claim 97, and wherein said amorphous material comprises at least one of cobalt and nickel.

132 134. (New) A signal to interference enhancer according to claim 104, and wherein said amorphous material comprises at least one of cobalt and nickel.

133 135. (New) A noise suppressor comprising:

an amorphous magnetic core; and

a bifilar winding wound around said amorphous magnetic core, and wherein said amorphous magnetic core has a closed E shape.

134 136. (New) A communication circuit according to claim 79, and wherein said amorphous magnetic core has a toroidal shape.

135 137. (New) A communication circuit according to claim 79, and wherein said amorphous magnetic core has a closed E shape.

136 138. (New) A noise suppressor according to claim 84, and wherein said amorphous magnetic core has a toroidal shape.

A' cont 137 139. (New) A noise suppressor according to claim 84, and wherein said amorphous magnetic core has a closed E shape.

138 140. (New) A noise suppressor according to claim 85, and wherein said amorphous magnetic core has a toroidal shape.

139 141. (New) A noise suppressor according to claim 85, and wherein said amorphous magnetic core has a closed E shape.

140 142. (New) A signal to interference enhancer comprising:

at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit operative to decrease radio frequency interference in said received signal,

said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal; and

said at least one active analog circuit operative to interface with a modem.

141

143. (New) A signal to interference enhancer comprising:

at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit operative to decrease radio frequency interference in said received signal,

said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal; and

said at least one active analog circuit operative to interface with an A/D converter.

A' cont

142

144. (New) A signal to interference enhancing repeater comprising:

a first passive analog circuit operative to decrease radio frequency interference in a received signal;

at least one active analog circuit operative to decrease radio frequency interference in said received signal; and

a second passive analog circuit operative to decrease radio frequency interference in a received signal,

said first passive analog circuit and said active analog circuit and said second passive analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal.; and

said at least one active analog circuit operative as an analog repeater

143

145. (New) A signal to interference enhancer comprising:

at least one passive analog circuit comprising a differential input and operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit comprising a single-ended output and operative to decrease radio frequency interference in said received signal,

said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal; and wherein said differential input serves as the input of the cascaded circuit and said single-ended output serves as the output of the cascaded circuits.

144

146. (New) A signal to interference enhancer comprising:

at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit operative to decrease radio frequency interference in said received signal,

said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal; and

the first said of at least one passive analog circuit comprising a differential input and the last of said at least one active analog circuit comprising a single-ended output.

145

147. (New) A signal to interference enhancer comprising:

at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit operative to decrease radio frequency interference in said received signal,

said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal; and

the first of said at least one passive analog circuit comprising a single-ended input and the last of said at least one active analog circuit comprising a single-ended output.

146
148. (New) A signal to interference enhancer comprising:

at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit operative to decrease radio frequency interference in said received signal,

said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal; and

a' cont

the first of said at least one passive analog circuit comprising a single-ended input and the last of said at least one active analog circuit comprising a differential output.

147
149. (New) A signal to interference enhancer comprising:

at least one passive analog circuit operative to decrease radio frequency interference in a received signal; and

at least one active analog circuit operative to decrease radio frequency interference in said received signal,

said at least one passive analog circuit and said at least one active analog circuit being arranged in series for providing radio frequency signal to interference enhancement to said received signal; and

said at least one active analog circuit operative to interface with an XDSL modem.

148
150. (New) A noise suppressing transformer assembly comprising:

at least one noise suppressor comprising:

an amorphous magnetic core; and

a bifilar winding wound around said amorphous magnetic core; and

a transformer comprising:

at least one core comprising at least a ferrite material; and

at least one coil wound about said at least one core,

said at least one noise suppressor and said transformer being arranged in series.

149

151. (New) A signal to interference enhancer embodied in a circuit package and comprising:

a low-pass EMI filter operative to attenuate interference at frequencies above a desired frequency pass band; and

a plurality of cascaded common mode chokes connected in series with said EMI filter, said common mode chokes being operative to attenuate interference at frequencies within said desired frequency pass band,

each of said low-pass EMI filter and said plurality of cascaded common mode chokes being contained in a separate metallic enclosure.

a' cont

150

152. (New) A signal to interference enhancer embodied in a circuit package and comprising:

a low-pass EMI filter operative to attenuate interference at frequencies above a desired frequency pass band; and

a plurality of cascaded common mode chokes connected in series with said EMI filter, said common mode chokes being operative to attenuate interference at frequencies within said desired frequency pass band,

said plurality of cascaded common mode chokes being contained in a metal enclosure and said EMI filter being embodied in a feed-through device inserted in a wall of said enclosure.

151

153. (New) A transformer comprising:

at least one core comprising at least one of metal-based amorphous material and a ferrite material;

at least one coil wound about said at least one core; and

at least one aluminum foil shield wound around at said least one coil.

152
~~154~~. (New) A noise suppressor embodied in a circuit package comprising:

A1 cont

an amorphous magnetic core;

a bifilar winding wound around said amorphous magnetic core, said bifilar winding comprising an input portion and an output portion; and

a metallic barrier located across said amorphous magnetic core and between said input portion and said output portion in order to reduce parasitic input to output interference coupling.

Respectfully submitted,

JULIAN H. COHEN
CADAS & PARRY
26 WEST 61ST STREET
NEW YORK, NEW YORK 10023

30086